

DETAILED ACTION

Notice to Applicant(s)

1. This application has been examined. Claims 1-14 are pending.

The prior art submitted on 8/2/06 has been considered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3-5, and 8-14, are rejected under 35 U.S.C. 102(e) as being anticipated by Marko et al. (6745151).

As per claim 1, Marko et al. disclose a method for monitoring the state of a vehicle chassis, the method comprising: measuring physical variables on the chassis by means of sensors (see columns 6-7, lines 28-16; and column 10, lines 30-51), providing a model of the vehicle which continuously identifies parameters of the vehicle and uses such parameters to continuously compile modeled variables in a simulatory prognosis of the vehicle behavior (see columns 7-8, lines 17-39); comparing the measured variables with the modeled variables by means of a processing unit, wherein the modeled variables are determined from specific variable performing a classification into classes of causes on the basis of the comparison and evaluating is a result of the classification (see columns 4-5, lines 33-34).

As per claim 3, Marko et al. disclose determining or updating a remaining lifetime of vehicle components before a critical state is reached or before a maintenance measure is needed, using at least one damage evolution or ageing model of the vehicle components (see columns 3-4, lines 34-8; and column 5, lines 35-65).

As per claims 4-5, Marko et al. disclose the comparison of the measured variables and the modeled variables is made by means of a correlation, and the classification is performed by means of the processing unit (see columns 4-5, lines 33-34).

As per claim 8, Marko et al. disclose the modeled variables are calculated (see columns 7-8, lines 18-39).

As per claim 9, Marko et al. disclose a device for monitoring the state of a vehicle chassis, in comprising: one or more sensors for measuring physical variables on the chassis (see columns 6-7, lines 29-16; and column 10, lines 30-51); a processing unit for calculating modeled variables, by continuously identifying vehicle parameters and continuously compiling a simulatory prognosis of the chassis behavior using a model of the chassis for comparing the measured variables with the modeled variables (see columns 7-8, lines 17-39) and for classifying as a result of the comparison; and means for evaluating the classified results (see columns 4-5, lines 33-34).

As per claim 10, Marko et al. disclose the processing unit comprises: at least one damage evolution or ageing model of chassis components which is used to determine or update a remaining lifetime before a critical state is reached or before a maintenance measure is required (see column 5, lines 35-65).

As per claims 11-12, Marko et al. disclose an interface to a superordinate control system of the vehicle is connected to the processing unit, via which data on an actual driving state is delivered to the processing unit or messages therefrom may be saved and may be transmitted to a driver or traction unit conductor or an external control centre, and at least one sensor is a vibration sensor, an acceleration sensor, an impact sensor, an acoustic sensor, a sound sensor, an eddy current sensor, a magnetic field sensor, a temperature sensor, a force sensor, an strain sensor, a distance sensor, a radar Doppler sensor or an ultrasound sensor (see columns 5-6, lines 66-37).

As per claim 13, Marko et al. disclose at least one sensor is arranged on a component selected from the group consisting of: on a wheelset, a wheelset axle, wheelset bearing, on a bogie, a chassis frame, on a primary spring suspension, a spring, a shock absorber, a wheelset guide, a secondary spring suspension, a stabilizer, a stop buffer, a traction linkage, on a drive, a drive motor, a gear, a clutch, a drive suspension, a brake, a brake disk, a brake cylinder, a brake lining, a brake pad, a brake linkage, and a brake caliper (see columns 4-5, lines 33-34).

As per claim 14, Marko et al. disclose the means for evaluation comprise a signaling device inside the vehicle or a signaling device in a mobile or stationary control centre outside the vehicle including a data transmission device from the vehicle to the control centre (see columns 5-7, lines 66-16).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, and 6-7, are rejected under 35 U.S.C.103(a) as being unpatentable over Marko et al. (6745151) in view of Bidaud (6681160).

As per claim 2, Marko et al. do not disclose speeds, acceleration, or forces are measured as physical variables. However, Bidaud discloses speeds, acceleration, or forces are measured as physical variables (see columns 8-9, lines 32-38; column 16, lines 7-42; columns 18-19, lines 25-19; and columns 19-20, lines 33-4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Marko et al. by combining speeds, acceleration, or forces are measured as physical variables for monitoring vehicle operation state.

As per claims 6-7, Bidaud discloses the classification is made as to whether a cause inside the vehicle or an external cause is involved (see columns 12-13, lines 34-50; and columns 16-17, lines 43-24).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

. Hershey et al. (5579013)

. Bryan (6044698)

. Lo (6125311)

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 571-272-6968. The

examiner can normally be reached on M-W (in a first week of a bi-week), and T-R (in a second week of bi-week) from 7:00AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Khoi H. Tran can be reached on 571-272-6919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dalena Tran/
Primary Examiner, Art Unit 3664
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